

# Pacific NW Spotter Newsletter

[www.weather.gov/Portland](http://www.weather.gov/Portland)

**APRIL 2007**

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## Spotters In ACTION Winter 2006-2007 in Review

Wow, what a winter 2006-2007 turned out to be! Your timely spotter reports of high winds, heavy rain, flooding and snow amounts were extremely valuable and really helped our forecasters in the warning process for several significant weather events. Please keep these reports coming—we appreciate the data!

We started off the winter season in high gear with record setting rainfall and flooding during the week of Nov 6-8, 2006. This rain event set an all-time rainfall record for the state of Oregon for a 24 hour period. Lees Camp, which is in the Coast Range of northwest Oregon (about 20 miles east of Tillamook) received 14.3 inches on November 6<sup>th</sup>. This smashed the previous record of 11.65 inches which was set in November, 1996 in Port Orford, OR. Of course all this heavy rain led to significant flooding across the region. Of particular significance was the Wilson River near Tillamook, which crested at 22.8 feet (flood stage is 12 feet) or 38,500 cubic feet-per-second (cfs), which set an all time flood of record for this river.

A few weeks after we had three significant wind storms that produced wind speeds in excess of 100 mph on the Oregon Coast. The most significant and most damaging was the wind storm on the evening of Dec 14, 2006. Several locations along the Oregon Coast had wind speeds in excess of 100 mph with this event. We also had wind speeds of 70 and 80 mph in the Willamette Valley with this storm. The strongest wind speed was on Mt Hebo (south of Tillamook) with 114 mph winds! This storm also produced widespread damage and power outages to over 400,000 people in Oregon. At the height of the storm, all major east-west roads in northwest Oregon leading from the Willamette Valley to the Coast were closed due to downed trees. This was the strongest wind storm we've seen since Nov 1995.

Listed below are some of the spotter reports we received during the Dec 14, 2006 wind event:

Trained spotter in Lincoln City: 91 mph

Amateur Radio Spotter in Rockaway Beach:  
97 mph

Trained spotter in Lincoln City: 83 mph

Trained spotter in Tillamook: 76 mph

Trained spotter in Yachats: 71 mph

Trained spotter in Florence: 49 mph sustained  
with gusts to 75 mph

Trained spotter in Klipsan Beach, WA: 62  
mph

Trained spotter in Ocean Park, WA: 57 mph  
sustained, numerous trees down

Trained spotter in Bay Center, WA: 60 mph

Trained spotter in Cannon Beach: 50 mph  
sustained with gusts to 62 mph.

Trained spotter in Corvallis: 55 mph with  
power outage

Trained spotter in Salem: 68 mph

Trained spotter in Dallas: Wind blew sensor  
away. Power lines and trees down.

Again, on behalf of the staff at the NWS office in Portland, we really want to express our sincere appreciation for your valuable reports this past winter.

Tyree Wilde

Warning Coordination Meteorologist

NWS Portland Oregon

## Climate Page

The Fall of 2006 started cool and dry in October...then the skies opened and the rain dumped through most of November into December. The weather went back to cool and generally drier again for the last half of December into January 2007. Most locations picked up significant snow in January...all the way down to the valley floor. After the snow melted, the temperatures began to warm a little and the rainfall dropped off to a little below normal for the rest of February. March saw Spring begin in earnest as temperatures rose to above normal readings...but precipitation dropped back below normal—except in the Northwest where storms continued to clip the area.

### Measured Averages & Departures from Normal

<b>Astoria</b>	<b>OCT</b>	<b>NOV</b>	<b>DEC</b>	<b>3mo avg</b>		<b>JAN</b>	<b>FEB</b>	<b>MAR</b>	<b>3mo avg</b>
Avg Temp	51.0	46.6	42.7	46.8	Avg Temp	40.1	43.9	46.7	43.6
Departure	-1.6	0.0	-0.1	-0.6	Departure	-2.3	-0.3	+0.7	-0.6
Precipitation	3.29	21.07	10.75	11.70	Precipitation	7.62	10.78	8.85	9.08
Departure	-2.32	+10.57	+0.35	+2.86	Departure	-2.00	+2.91	+1.48	+0.80

<b>Eugene</b>	<b>OCT</b>	<b>NOV</b>	<b>DEC</b>	<b>3mo avg</b>		<b>JAN</b>	<b>FEB</b>	<b>MAR</b>	<b>3mo avg</b>
Avg Temp	50.5	46.2	39.5	45.4	Avg Temp	37.6	43.3	49.1	43.3
Departure	-2.1	+1.5	-0.0	-0.2	Departure	-2.2	+0.5	+2.8	+0.4
Precipitation	0.66	14.28	7.68	7.54	Precipitation	4.04	5.22	1.96	3.74
Departure	-2.36	+5.85	-0.61	+0.96	Departure	-3.61	-1.13	-3.90	-2.88

<b>Portland</b>	<b>OCT</b>	<b>NOV</b>	<b>DEC</b>	<b>3mo avg</b>		<b>JAN</b>	<b>FEB</b>	<b>MAR</b>	<b>3mo avg</b>
Avg Temp	54.0	47.4	40.0	47.1	Avg Temp	38.1	44.2	50.1	44.1
Departure	-0.3	+1.6	-0.2	+0.4	Departure	-1.8	+1.1	+2.9	-0.7
Precipitation	1.40	11.92	5.86	6.39	Precipitation	2.74	3.47	3.23	3.15
Departure	-1.48	+6.49	+0.15	+1.72	Departure	-2.33	-0.71	-0.48	-1.17

<b>Salem</b>	<b>OCT</b>	<b>NOV</b>	<b>DEC</b>	<b>3mo avg</b>		<b>JAN</b>	<b>FEB</b>	<b>MAR</b>	<b>3mo avg</b>
Avg Temp	52.0	46.9	39.6	46.2	Avg Temp	38.1	44.3	49.0	43.8
Departure	-0.9	+1.7	-0.6	+0.0	Departure	-2.2	+1.3	+2.5	+0.5
Precipitation	0.65	15.15	7.35	7.72	Precipitation	3.92	5.33	2.35	3.87
Departure	-2.38	+8.76	+0.89	+2.42	Departure	-1.91	+0.24	-2.12	-1.26

## Spring New Spotter Training Sessions

There are no specific requirements to become a Spotter. Just a willingness to learn and enthusiasm for weather. For additional information on Spotter training, contact Dan Keirns at (503) 326-2340 ext. 239 or dan.keirns@noaa.gov.

### Dates and Locations

#### ***ALL TRAINING SESSIONS 7:00PM-830PM***

**Date:** April 2, 2007 (Mon)

**Location:** Gates, OR

Gates Fire Station  
101 Sorbin St  
Gates, OR 97346

**Date:** May 2, 2007 (Wed)

**Location:** Oakridge, OR

Oakridge Fire Station  
47592 Hwy 58  
Oakridge, OR 97463

**Date:** April 18, 2007 (Wed)

**Location:** Corvallis, OR

Hewlett Packard Bldg  
Room NE4L  
Corvallis, OR 97330

**Date:** May 7, 2007 (Mon)

**Location:** Welches, OR

Welches (Hoodland) Fire Station  
69634 E Hwy 26  
Welches, OR 97067

**Date:** April 19, 2007 (Thu)

**Location:** Clatskanie, OR

Clatskanie Fire Station  
280 SE 3rd St  
Clatskanie, OR 97016

**Date:** May 8, 2007 (Tue)

**Location:** Wlaterville, OR

McKenzie Fire & Rescue Bldg  
(approx 12 mi E of Springfield)  
Wlaterville, OR 97489

# Thunderstorms...

## Life Cycle of a Thunderstorm

NOAA

**1,800 thunderstorms occur at any moment around the world. That's 16 million a year!**

Thunderstorms affect relatively small areas when compared with hurricanes and winter storms. The typical thunderstorm is 15 miles in diameter. Thunderstorms are all dangerous! They last an average of 30 minutes. An estimated 100,000 thunderstorms occur each year in the United States; about 10 percent are classified as severe.

## Lightning Facts

Lightning causes an average of 80 fatalities and 300 injuries each year. Lightning occurs in all thunderstorms; each year lightning strikes the Earth 20 million times.

The energy from one lightning flash could light a 100-watt light bulb for more than 3 months. Most lightning fatalities and injuries occur when people are caught outdoors in the summer months during the afternoon and evening.

Lightning can occur from cloud-to-cloud, within a cloud, cloud-to-ground, or cloud-to-air. Many fires in the western United States and Alaska are started by lightning. The air near a lightning strike is heated to 50,000°F *hotter than the surface of the sun!* The rapid heating and cooling of the air near the lightning channel causes a shock wave that results in **thunder**.

## How far away is the Thunderstorm?

Count the number of seconds between a flash of lightning and the next clap of thunder. Divide this number by 5 to determine the distance to the lightning in miles.

## In recent years, people have been killed by lightning while:

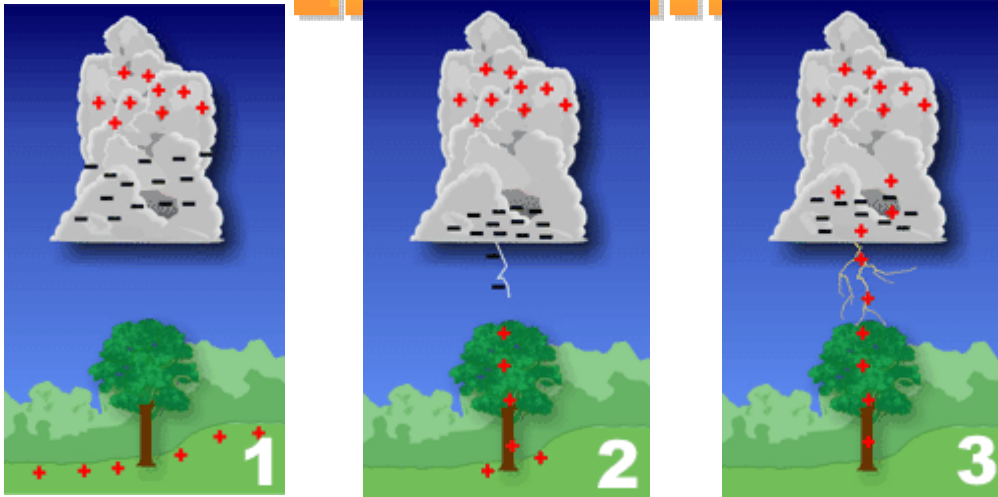
Boating, standing under a tree, riding a horse, swimming, riding on a lawnmower, playing soccer, golfing, talking on the telephone, fishing in a boat, bike riding, loading a truck, mountain climbing, among others.

## 30/30 Lightning Safety Rule

Go indoors if, after seeing lightning, you cannot count to 30 before hearing Thunder. Stay indoors for 30 minutes after hearing the last clap of thunder.

If lightning develops near you, move to a sturdy building or car. Do not take shelter in small sheds, under isolated trees, or in convertible automobiles. Stay away from tall objects such as towers, fences, telephone poles, and power lines. If lightning is occurring and a sturdy shelter is not available, get inside a hard top automobile and keep the windows up. Avoid touching any metal. Utility lines and metal pipes can conduct electricity. Unplug appliances not necessary for obtaining weather information. Avoid using the telephone or any electrical appliances. Use phones **ONLY** in an emergency. Do not take a bath or shower during a thunderstorm. Turn off air conditioners. Power surges from lightning can cause serious damage. Find a low spot away from trees, fences, and poles. Make sure the place you pick is not subject to flooding. If you are in the woods, take shelter under the shorter trees. If you are boating or swimming, get to land and find shelter immediately!

# LIGHTNING



Charges build up in a thunderstorm with negative charges at the base and positive charges at the top. The thunderstorm moves along the negatively charged earth and creates a shadow of positive charge.

A channel of negative charge, called a "stepped leader" will descend from the bottom of the storm toward the ground (image 2). It is invisible to the human eye, and shoots to the ground in a series of rapid steps, each occurring in less time than it takes to blink your eye. As the negative leader approaches the ground, positive charge collects in the ground and in objects on the ground.

This positive charge "reaches" out to the approaching negative charge with its own channel, called a "streamer" (image 3). When these channels connect, the resulting electrical transfer is what we see as lightning. After the initial lightning stroke, if enough charge is leftover, additional lightning strokes will use the same channel and will give the bolt its flickering appearance.

Strikes can also come from the top of the thunderstorm. These are called positive strikes and have about 5 times the heat energy as the negative strikes. They can strike far from the storm...as much as 10 miles and in

## Lightning—The Underrated Killer

In the United States, there are an [estimated 25 million lightning](#) flashes each year. During the past 30 years, [lightning killed an average of 80 people per year](#). This is more than the average of 70 deaths per year caused by tornadoes. Yet because lightning usually claims only one or two victims at a time and does not cause mass destruction of property, it is underrated as a risk. While documented lightning injuries in the United States average about 300 per year, undocumented injuries likely much higher.

**Watch for Developing Thunderstorms:** [Thunderstorms are most likely to develop](#) on spring or summer days but can occur year round. As the sun heats the air, pockets of warmer air start to rise and cumulus clouds form. Continued heating can cause these clouds to grow vertically into towering cumulus clouds, often the first sign of a developing thunderstorm.

**An Approaching Thunderstorm: When to Seek [Safe Shelter](#):** Lightning can strike as far as 10 miles from area where it is raining. That's about the distance you can hear thunder. **If you can hear thunder, you are within striking distance. Seek safe shelter immediately.**

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## Summer Severe Weather Spotter Checklist

*High Winds :  
Sustained 40 mph  
and greater or  
gusts over 58 mph.  
Heavy Rain : Over  
1.0 inches in 24  
hours, or 0.50  
inches in 1 hour.  
Flooding : Any  
kind of river  
flooding.  
Hail : 1/2 inch  
(dime size) or  
larger*

## OREGON WATER SUPPLY OUTLOOK

The outlook for summer 2007 calls for near-normal water supply in the Oregon rivers west of the Cascades...based on current conditions and expected precipitation through the spring and summer. The spring flood potential is low for all basins in Oregon.

February precipitation was above normal in most parts of the state...with significant increases in mid and high elevation snowpack.

NOAA's temperature and precipitation outlook for the spring leans toward above-normal temperatures and below-normal precipitation across most of Oregon. For more information on seasonal outlooks...visit the Climate Prediction Center web page at: [www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov).

Snowpack across western Oregon (as of March 1st) was just about normal—ranging from 99% of normal in the Willamette basin to 104% in the Rogue and Umpqua basins.

Seasonal precipitation (Oct-Feb) in western Oregon continues about 120% of normal—largely owing to the copious amounts of rain in November. However, for most locations in western Oregon, a drier than normal March has pulled the seasonal precipitation totals down to near 100% of normal. With below-normal precipitation forecast for the remainder of the spring and summer, this downward trend will continue.

Spring snowmelt flooding (as of March 1st) is unlikely due to the near-normal snowpack in the mountains.



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[www.weather.gov/Portland](http://www.weather.gov/Portland)

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**Outdoor Activities: Minimize the Risk of Being Struck:** Most lightning deaths and injuries occur in the summer. Where organized [outdoor](#) sports activities take place, [coaches](#), [camp counselors](#) and other adults must stop activities at the first roar of thunder to ensure everyone time to get a large building or enclosed vehicle. Leaders of outdoors events should have a written plan that all staff are aware of and enforce.

**Indoor Activities: Things to Avoid:** [Inside](#) building, stay off corded phones, computers and other electrical equipment that put you in direct contact with electricity or plumbing. Buy ground fault protectors for key equipment. When inside, wait 30 minutes after the last strike, before going out again.

**Helping a Lightning Strike Victim:** If a person is struck by lightning, call 911 and get [medical care](#) immediately. Cardiac arrest and irregularities, burns, and nerve damage are common in cases where people are struck by lightning. However, with proper treatment, including CPR if necessary, most victims survive a lightning strike. You are in no danger helping a lightning victim. The charge will not affect you.